



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,439	04/01/2004	Panu K. Zoller	53766US010	2823
32692	7590	05/13/2009		
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
EXAMINER				
CHANG, VICTOR S				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
05/13/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/817,439
Filing Date: April 01, 2004
Appellant(s): ZOLLER ET AL.

Thomas M. Spielbauer
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/10/2009 appealing from the Office action mailed 8/28/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct. The claim status identifiers and markups are based on the allowed claims in US 6365254, which is the basis of the current reissue application.

(8) Evidence Relied Upon

US 6037028	Reinders	3-2000
US 5167995	Johnson et al.	12-1992

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

- I. Claims 1-3, 7-9, 22-24, 31-32, 35, 38, 40-42, 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. [US 5178924].

The invention of Johnson '924 relates to a release liner. In one embodiment, the liner comprises a friction enhancing agent and a release layer deposited on opposite surfaces of a support sheet. Various copolymers, such as ethylene vinyl acetate (EVA) and ethylene acrylic acid (EAA), etc., are functionally equivalent base material suitable for forming the release layer. The liner is useful for winding together with a dual functional adhesive tape into a roll form. The adhesive tape has a tacky pressure sensitive adhesive on one side and a tack-free heat-activated adhesive on the other side [col. 4, ll. 67 through col. 5, ll. 12]. Since a low friction between the liner and the tack-free heat-activated adhesive may result in poor roll stability, the liner surface facing the tack-free heat-activated adhesive is treated with a friction-enhancing agent to increase friction to desired level (roll stability layer) [col. 5, ll. 10-18]. Examples of the roll stability layers include a continuous layer of ethylene acrylic acid (EAA, a release layer material) mixtures containing a tackifier (a friction enhancing agent), which is applied onto a polyethylene support sheet of a release liner [col. 5, ll. 19-24].

For claims 1, 2, 9, 22, 32, 35, 40, 41 and 47, Johnson '924 is silent about making a roll stability layer comprising an ethylene vinyl acetate (EVA). However, the teaching of Johnson '924 regarding a roll stability layer of a continuous layer of ethylene acrylic acid (a release layer

material) mixtures containing a tackifier (a friction enhancing agent) suggests that a release material based surface layer (release layer) can be treated with a tackifier (friction enhancing agent) to form a roll stability layer. Further, since Johnson '924 teaches that EVA and EAA, etc., are functionally equivalent base materials suitable for forming release layers, it would have been obvious to one of ordinary skill in the art to substitute the EAA with EVA, and incorporating a friction enhancing agent, such as a tackifier, to form the roll stability layer as claimed, because the selection of a known equivalent material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07. Moreover, since John '924 teaches that both EAA and EVA are capable of forming surface layers on the support sheet of a release liner, the substitution is expected to be successful at the time the invention was made.

For claims 3 and 42, the phrase "upto about 26 microinches" is interpreted to include zero, hence, the surface roughness is zero. Further, since Johnson '924 teaches generally the same subject matter for the same end use as the claimed invention, a workable surface roughness is deemed to be an obvious routine optimization, motivated by the same required properties for the same end use as the claimed invention.

For claims 7, 23, 31 and 48-49, Johnson teaches that the release liner material can be low, medium or linear low density polyethylene. The low to medium density would include density of up to about 0.92 g/cc [col. 4, ll. 54-65].

For claims 8, 24 and 50, Johnson teaches that the liner can be of multi-layered construction [col. 7, ll. 18-26].

For claim 38, Johnson teaches that silicone is known in the art as a release material [col. 4, ll. 35-40].

For claim 47, the phrase "upto about 5%" is interpreted to include zero, hence the antiblocking amount is interpreted as optional and bears no patentable weight.

II. Claims 4-5, 43-44 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. [US 5178924] in view of Reinders [US 6037028].

The teachings of Johnson are again relied upon as set forth above.

For claim 4-5, 43-44 and 55, Johnson teaches olefin-based heat-activated adhesives for the dual-functional double sided adhesive tape [col. 5, ll. 23-24]. Alternatively, Reinders' invention relates to polyethylene based heat activated adhesive layer [col. 5, ll. 36-37] for providing a strong bond. It would have been obvious to one having ordinary skill in the art to incorporate Reinders' polyethylene based heat-activated adhesives to make Johnson's the dual-functional double sided adhesive tape, motivated by the desire to obtain a strong bond.

III. Claims 6, 10-21, 25-30, 33-34, 36-37, 39, 45, 46 and 51-53, are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. [US 5178924] in view of Johnson et al. [US 5167995].

The teachings of Johnson '924 are again relied upon as set forth above.

For claim 6, Johnson '924 lacks a teaching that the pressure sensitive adhesive comprises an acrylic foam pressure sensitive adhesive. However, Johnson '995 relates to a double-sided adhesive assembly having a pressure sensitive adhesive on one side and HAA on the opposite side [col. 4, ll. 40-47]. The adhesive can be acrylic foam based pressure sensitive adhesive [col. 6, ll. 15]. Antiblocking material is contained in the release material [col. 11, ll. 15-23]. Clearly

antiblocking material is result-effective in modifying the releasability at the liner/adhesive interface. It would have been obvious to one having ordinary skill in the art to incorporate a workable amount of antiblocking agent in the release liner, as taught by Johnson '995, in the invention of Johnson '924, motivated by the desire to provide for desired level of releasability of the release liner from the heat activated adhesive while maintaining roll stability.

For claims 10-14, 25-28, 36-37, 39, 45, 46 and 51-53, Johnson '924 is silent about the vinyl acetate content in EVA. However, since Johnson '924 render the general subject matter of the claimed invention obvious, including the use of EVA for release layer, and since EVA is a copolymer of ethylene monomer and vinyl acetate monomer, the properties of EVA is inherently related to the ratio of the two monomers, selecting a workable vinyl acetate content in EVA capable of forming a release layer for tackifier treatment to obtain a desired level of friction or roll stability, without blocking, is deemed to be an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to be able to unwind the adhesive roll for use. Further, one of ordinary skill in the art would have recognized that since blocking (adhering) property is clearly the opposite of releasing property, overly modifying a release layer with tackifier would have exceeded the desired level of friction taught by Johnson '924 and result in blocking.

For claims 15-16 and 29-30, the phrase "up to about 5%" is interpreted to include zero, hence the antiblocking amount is zero.

For claims 17-19, since the collective teachings of prior art render the composition of the instant invention obvious, a workable coefficient of friction of the roll stability layer is deemed

to be an obvious routine optimization, motivated by the desire to obtain desired levels of friction for roll stability.

For claim 20-21, JP '924 is silent about the ratio of roll diameter over the width. However, since JP '924 teaches generally the same subject matter, a workable ratio is deemed to be an obvious routine optimization, motivated by the desire to provide sufficient amount of tape per roll and roll stability for the same end use as the claimed invention.

For claims 33-34, the release layer comprises low density polyethylene having density of about 0.92 g/cc [Johnson '924].

(10) Response to Argument

Appellants argue at Appeal Brief page 13:

"Although the selection of a known material based on its suitability for its intended use may support a *prima facie* obviousness determination (see *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945)); the Patent Office has failed to establish such suitability. First, it is critical to recognize that the Patent Office has relied solely on Johnson's [US 5,178,924] purported teaching of the equivalence of ethylene vinyl acetate and ethylene acrylic acid as the **release layer** - a conclusion based solely on the fact that both materials were included in a list of "illustrative examples of homopolymers and copolymers that may be used in the release layer" of Johnson's [US 5,178,924] release liner. (See col. 4, lines 50-66.) However, it is the roll stability layer, not the release layer, of claim 1 of the present invention that must comprise an ethylene vinyl acetate."

However, the teaching of Johnson '924 regarding a roll stability layer of a continuous layer of ethylene acrylic acid (a release layer material) mixtures containing a tackifier (a friction enhancing agent) suggests that a release material based surface layer (release layer) can be treated with a tackifier (friction enhancing agent) to form a roll stability layer. Further, since Johnson '924 teaches that EVA and EAA, etc., are functionally equivalent base materials suitable for forming release layers, it would have been obvious to one of ordinary skill in the art

to substitute the EAA with EVA, and incorporating a friction enhancing agent, such as a tackifier, to form the roll stability layer as claimed, because the selection of a known equivalent material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07. Moreover, since John '924 teaches that both EAA and EVA are capable of forming surface layers on the support sheet of a release liner, the substitution is expected to be successful at the time the invention was made. Significantly, Johnson '924 teaches that the friction enhancing agent is a result effective component in providing desired level of friction for roll stability, and the friction enhancing agent modified surface layer has a different overall composition. Appellants' argument ignores that nowhere has the Office suggested using an unmodified EVA as a roll stability layer.

Appellants argue at page 15:

"Johnson [US 5,178,924] merely teaches that ethylene/acrylic acid copolymers modified with a tackifier can form a friction enhancing agent. (See Johnson [US 5,178,924] at col. 5, lines 19- 24.) The Patent Office has failed to show where Johnson [US 5,178,924] describes, teaches or suggests that "release layers" in general can be modified with a tackifier to form a friction enhancing agent. That is, simply because Johnson [US 5,178,924] may teach that one material that can be used a release agent (e.g., ethylene/acrylic acid copolymers) can also be modified with a tackifier to form a friction enhancing agent does not provide a legal, technical, or logical basis to conclude that any other material that can be used as a release agent (e.g., ethylene vinyl acetate) can also be modified with a tackifier to form a friction enhancing agent."

However, since Johnson '924 clearly teaches that EAA is a copolymer for forming release layer, and a layer of EAA modified with a tackifier (friction enhancing agent) provides desired level of friction for use as a roll stability layer, absence of any evidence that EVA and tackifier are necessarily incompatible, it would have been obvious to one of ordinary skill in the art to modify a functionally equivalent EVA based release layer with a tackifier for use as a roll stability layer, with a reasonable expectation of success at the time the invention was made.

Appellants argue at page 16:

"the Patent Office has failed to provide any basis for the assertion that the tackifier is the friction agent or that the tackifier alone accounts for a "surface property modifying effect.""

However, the related teachings of Johnson '924 at col. 4-5 are provided as follows:

50 The release layer typically comprises one or more of the following: an olefinic homopolymer or copolymer, or a copolymer of an olefin and at least one polar comonomer, or blends thereof.

Some illustrative examples of homopolymers and
55 copolymers that may be used in the release layer of the release liner of the invention include, but are not limited to, butylene; isobutylene; high, medium, low, and linear low density polyethylene; ethylene vinyl acetate; ethylene acrylic acid; ethylene methyl (meth)acrylate; ethylene butyl acrylate; polypropylene; ethylene/propylene
60 copolymers; and impact resistant ethylene/propylene copolymers. For applications wherein shock resistance at very low temperatures, e.g., below -20° C., is desired, copolymers of ethylene are preferred as they
65 typically exhibit greater shock resistance at low temperature.

In some instances, release liners of the invention may further comprise an optional friction-enhancing agent

5

U.S. Pat. No. 4,410,000

on the major surface of support sheet opposite the major surface on which the release layer is disposed. In applications where the release liner is to be used on an adhesive-coated article such as dual-functional tape, e.g., coated with a tacky pressure-sensitive adhesive on one side and a tack-free heat-activated adhesive on the other side which is wound into roll form, the back surface of the support sheet will be wound into contact with the heat-activated adhesive-coated side of the tape. If the support sheet and tape exhibit low friction, they may tend to move freely, resulting in poor roll stability. In such instances, it may be desired to select the support sheet from materials as described above which inherently exhibit desired friction with the tape, or to treat the support sheet to increase friction to desired levels, e.g., by applying the friction-enhancing agent thereto. Such agent may be applied in the form of a substantially continuous layer or may be selectively applied in pattern form. Illustrative examples of such agents include ethylene/acrylic acid mixtures containing tackifiers which provide improved performance when applied to polyethylene support sheets for use on release liners used with tapes with back sides made of olefin-based, very low tack heat-activated adhesives.

Clearly, one of ordinary skill in the art reading the above teachings would recognize that the totality of Johnson '924 teaches that the tackifier is a friction enhancing agent which modifies the EAA layer to a desired level of friction for use as a roll stability layer. Appellants' argument to the contrary is unpersuasive.

Appellants request at page 18 for an affidavit relating to Office's position regarding friction and adhesiveness modification provided by a tackifier, and argues that the examiner should otherwise provide an explanation why appellants' request is inadequate. However, for the same reasons set forth above, the examiner maintains that the totality of the teachings of Johnson '924 is self-evident that a tackifier is a friction enhancing agent, which is result effective in providing desired level of friction to a release material based surface layer and the resultant layer is suitable for use as a roll stability layer. No affidavit or further evidentiary support is needed.

Appellants argue at page 21:

"claim 10 requires that the ethylene vinyl acetate of the roll stability layer have a sufficiently low content of vinyl acetate that said roll stability layer does not block with said heat activated adhesive layer."

However, since Johnson '924 render the general subject matter of the claimed invention obvious, including the use of EVA for release layer, and since EVA is a copolymer of ethylene monomer and vinyl acetate monomer, the properties of EVA is inherently related to the ratio of the two monomers, selecting a workable vinyl acetate content in EVA capable of forming a release layer for tackifier treatment to obtain a desired level of friction or roll stability, without blocking, is deemed to be an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to be able to unwind the adhesive roll for use. Further, one of ordinary skill in the art

would have recognized that since blocking (adhering) property is clearly the opposite of releasing property, overly modifying a release layer with tackifier would have exceeded the desired level of friction taught by Johnson '924 and result in blocking.

Appellants argue at pages 23-24:

"In addition, according to the Examiner, "[f]or claims 15-16 and 29-30, the phrase "upto about 5%" is interpreted to include zero, hence the antiblocking amount is zero." However, claim 15 does not include this phrase. Rather, claim 15 requires the presence of "an anti- blocking agent in an amount so that a coefficient of friction of the roll stability layer, when measured against the heat-activated adhesive layer, remains substantially constant." As the Patent Office has failed to show how the cited references describe, teach or suggest the presence of any amount of an antiblocking agent, the rejection of claim 15 can not be sustained."

However, since the claim language fails to set a lower limit, it is interpreted as including an amount of zero, i.e., the limitation is considered to be optional, and there is no requirement for the prior art to provide or account for the limitation, because it does not constitute a limitation in any patentable sense. Further, even if the limitation is considered, since Johnson '924 teaches generally the same subject matter for the same end use as the claimed invention, a workable surface roughness is deemed to be an obvious routine optimization, motivated by the same required properties for the same end use as the claimed invention.

Appellants argue at pages 25-26:

"According to the Patent Office, "it would have been obvious to one having ordinary skill in the art to modify Johnson by providing the roll diameter to be at least 20 times the width of the tape, based on optimization through routine experimentation, with the roll stability layer therewith." (Final Office Action dated August 28, 20087; at page 5.) However, the Patent Office has failed to provide any basis for this assertion; has not shown how the prior art provides any guidance on what "routine experimentation" would be required; or how and why this "routine experimentation" would lead to the structure recited in claim 21."

However, since JP '924 teaches generally the same subject matter, a workable ratio is deemed to be an obvious routine optimization, motivated by the desire to provide sufficient amount of tape per roll and roll stability for the same end use as the claimed invention.

Appellants argue at page 26:

“Although claim 45 was included in the list of claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. [US 5,178,924] in view of Johnson et al. [US 5,167,995], no specific arguments regarding this claim were presented by the Patent Office following Appellants' Request for Continued Examination. However, in view of the Patent Office's arguments with respect to other similar claims, Appellants note that the Patent Office has failed to show how the cited references describe, teach or suggest any relationship between the vinyl acetate content of an ethylene vinyl acetate roll stability layer and blocking with a heat activated adhesive.”

However, claim 45 is originally filed claim in the reissue application, and the rejection of claim 45 has always been maintained throughout the prosecution, as indicated in the headings. Since the scope of claimed subject matter has been rejected, as appellants' acknowledgement that arguments with respect to other similar claims have been provided, it is unseen that the Office has failed to show how claim 45 has been rejected. Moe particularly, there is no requirement to reject each claim separately, and the collective teachings of record has clearly been shown that the scope of claim 45 is unpatentable.

Finally, similar to claim 45, appellants' argument directed to claim 46 is unpersuasive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 1794

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Victor S Chang/

Primary Examiner, Art Unit 1794

Conferees:

/Jennifer Michener/

QAS, TC1700

/David R. Sample/

Supervisory Patent Examiner, Art Unit 1794